230

HALEY & ALDRICH

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

CLOSURE REPORT

UNDERGROUND STORAGE TANK 29T

To: **Mr. Brian Mossman**
Boeing Realty Corporation
3855 Lakewood Blvd.
Building 1A MC D001-0097
Long Beach, CA 90846

From: **Haley & Aldrich, Inc.**

Date: **January 30, 2002**

Re: **Closure Report, Underground Storage Tank 29T, Boeing Realty Corporation, Former C-6 Facility – Parcel C, Los Angeles, California**

Haley & Aldrich, Inc. is herein providing this closure report to summarize the field investigation and laboratory analyses for the former 300 to 550-gallon capacity, diesel, underground storage tank (UST) 29T. Former UST 29T was located near the center of Building 2, on Parcel C of the Boeing Realty Corporation's (BRC's) Former C-6 Facility in Los Angeles, California (subject parcel) as shown on Figures 1 and 2.

INTRODUCTION

Specific information regarding the size and installation and removal dates of former UST 29T could not be located in BRC files. It is thought that UST 29T was removed prior to 2000. According to Mr. Scott Lattimore of BRC, former UST 29T had a volume of approximately 300 to 550 gallons, and was used to store diesel fuel for an electric generator. The location of former UST 29T is shown on a Woodward-Clyde Consultants Plot Plan dated October 21, 1971, which was used to facilitate this investigation. A copy of this map is included in Appendix A. No tank-removal report or post tank-removal investigation information is available.

A review of soil borings installed in the vicinity of former UST 29T was performed to evaluate if petroleum hydrocarbon impacts are present in the soil. Kennedy Jenks Consultants, Inc. (KJC) drilled soil boring C-2-217 in October 2000 during the Phase II Soil Investigation of Parcel C. Boring C-2-217 is approximately ten feet northwest of the reported former UST 29T location as shown on Figure 3. Soil samples were collected at 10, 15 and 20 feet below ground surface (bgs) and analyzed for total petroleum hydrocarbons (TPH) by EPA Method 8015M and volatile organic compounds (VOCs) by EPA Method 8260B. Based on the results of the laboratory analyses, no detectable concentrations of TPH were reported in collected soil samples (Table 1). Acetone was the only VOC detected at concentrations up to 16 micrograms per kilogram (µg/kg) (Table 2).

Because there was no available tank removal report and boring C-2-217 is approximately ten feet from the reported location of former UST 29T, Haley & Aldrich proposed the installation of two soil borings in the vicinity of the former 29T UST to evaluate if UST-related soil impacts exist. Given the small size of the UST, the two borings were proposed to be placed at the approximate ends of the UST (Figure 3). The proposed boring locations were presented to the Regional Water Quality Control Board (RWQCB) on October 25, 1991. Mr. John Geroch of the RWQCB verbally approved the two-boring approach on October 25, 2001.

FIELD ACTIVITIES

The scope of work consisted of locating the reported former UST 29T position using a registered land surveyor, utility clearance, advancement of the soil borings, and laboratory analysis of the soil samples. These tasks are discussed below.

TAIT & Associates, Inc. (Tait), BRC's on-site surveyor, was tasked to locate the former UST 29T position as shown on the Woodward-Clyde Plot Plan using the present site coordinate system and surveyed benchmarks. A registered land surveyor from Tait surveyed the reported location of former UST 29T on November 9, 2001. Based on the Woodward-Clyde Plot Plan, Tait reported that former UST 29T was located at approximately 12257.00 easting and 11912.00 northing and marked the location in the field. Appendix B includes a survey report from Tait regarding the location of former UST 29T. Based on this surveyed location, the two proposed soil borings were located as shown on Figure3.

On November 8, 2001, Haley & Aldrich notified Underground Service Alert of Southern California (USA) for utility clearance of the two borings. USA issued ticket number 660825 and notified utility companies of the proposed work. Utility companies were given two days to visit the site and mark any buried utility lines in the area. There were no markings in the area of the soil borings. Recent site grading and compaction activities reportedly resulted in the removal of buried utilities in the area of former UST 29T.

Kehoe Testing and Engineering, Inc. (Kehoe) was contracted by Haley & Aldrich to install the soil borings. Two soil borings were completed in the vicinity of former UST 29T on November 13, 2001 as shown on Figure 3. Soil samples were collected at depths of 10, 15, 20, 25 and 30 feet bgs in each boring. The borings were located approximately 4-feet north and 4-feet south of the center of the reported former UST 29T position (Figure 3). Borings were advanced to sampling depths using a truck-mounted Geoprobe 5410 direct-push rig. Samples were collected in 1-inch diameter by 6-inch long brass sleeves. Soils were described and logged by a Haley & Aldrich geologist at the site using the Unified Soil Classification System (USCS). Boring logs are attached in Appendix C.

An ambient temperature headspace analysis (ATHA) was performed at each sampling interval. Approximately 2-ounces of soil sample is placed in a zip-lock baggie and allowed to come to equilibrium with ambient temperature. A photoionization detector (PID) reading is then taken from the baggie headspace to indicate the level of VOCs present. The PID used for this investigation was a RAE Systems MiniRAE Plus (Rental ID - RAE 01) with a 10.6 eV lamp. The unit was calibrated on November 13, 2001 using a 97 parts per million Isobutylene in air mixture. ATHA readings are shown on the boring logs beneath the lithologic descriptions of the samples.

Sample sleeves were sealed with Teflon sheets and plastic caps. Samples were placed in a cooler with blue ice and transported under standard Chain-of-Custody (COC) procedures to Severn Trent Services (STL) in Santa Ana, California for laboratory analyses. Samples from 10, 15 and 20 feet bgs were analyzed for TPH by EPA Method 8015B. Samples from 25 and 30 feet bgs were placed on hold pending the results of the shallow soil samples.

INVESTIGATION RESULTS AND CONCLUSIONS

Results of the former UST 29T investigation suggest that no apparent chemical soil impacts are present as a result of the UST operation. Field screening of all soil samples collected using the ATHA method yielded PID readings of non-detected to 3.6 parts per million (ppm) of total VOCs.

Based on the results of the laboratory analysis of the six soil samples, non-detectable (< 10 milligrams per kilogram [mg/kg]) concentrations of TPH were reported. Table 1 summarizes the analytical results for former UST 29T. The laboratory reports are included in Appendix D.

Based upon the investigation performed as described in this letter report and the results of previous soil sampling in the area, no apparent soil impacts associated with former UST 29T were found. Haley & Aldrich proposes submitting UST 29T for closure and no further action with the RWQCB.

Sincerely yours,
HALEY & ALDRICH, INC.

Richard M. Farson, PE
Project Engineer

Scott Zachary
Project Manager

Attachments:

Table 1 – Former UST 29T Soil Analytical Results
Table 2 - Soil Boring C-2-217 – VOC Analytical Results

Figure 1 - Site Location Map
Figure 2 - Tank Location Map
Figure 3 - Boring Locations and Laboratory Analytical Map

Appendix A – Woodwarard-Clyde Plot Plan
Appendix B - Surveyor Report
Appendix C - Boring Logs
Appendix D - Laboratory Report & Chain of Custody

Tables

TABLES

TABLE 1

FORMER C-6 FACILITY, LOS ANGELES, CALIFORNIA

FORMER UST 29T SOIL ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS (TPH) BY EPA METHOD 8015B

Boring ID	Sample Name	Depth (feet bgs)	Total Carbon Chain Range
C-2-217	C-2-217-10	10	<10
	C-2-217-15	15	<10
	C-2-217-20	20	<10
29_T_1	29_T_1_10	10	<10
	29_T_1_15	15	<10
	29_T_1_20	20	<10
29_T_2	29_T_2_10	10	<10
	29_T_2_15	15	<10
	29_T_2_20	20	<10

NOTES:
Results reported in milligrams per kilogram (mg/kg).

QA/QC: BB
Date: 1/30/02

TABLE 2

FORMER C-6 FACILITY, LOS ANGELES, CALIFORNIA

SOIL BORING C-2-217
VOLATILE ORGANIC COMPOUNDS (VOCs) by EPA METHOD 8260B

Analyte	SOIL SAMPLE ID		
	C-2-217-10 (µg/kg)	C-2-217-15 (µg/kg)	C-2-217-20 (µg/kg)
trans-1,3-Dichloropropene	<5	<5	<5
Acetone	**16 J**	**8.3 J**	**8.7 J**
Ethylbenzene	<5	<5	<5
Trichlorofluoromethane	<10	<10	<10
Hexachlorobutadiene	<5	<5	<5
2-Hexanone	<25	<25	<25
Iodomethane	<10	<10	<10
Isopropylbenzene	<5	<5	<5
Isopropyl ether	<10	<10	<10
p-Isopropyltoluene	<5	<5	<5
Methylene chloride	<10	<10	<10
Benzene	<5	<5	<5
n-Propylbenzene	<5	<5	<5
Styrene	<10	<10	<10
1,1,1,2-Tetrachloroethane	<5	<5	<5
1,1,2,2-Tetrachloroethane	<5	<5	<5
Tetrachloroethene	<5	<5	<5
Toluene	<5	<5	<5
1,2,3-Trichlorobenzene	<5	<5	<5
1,2,4-Trichlorobenzene	<5	<5	<5
1,1,1-Trichloroethane	<5	<5	<5
1,1,2-Trichloroethane	<5	<5	<5
Trichloroethene	<5	<5	<5
1,2,3-Trichloropropane	<5	<5	<5
1,2,4-Trimethylbenzene	<5	<5	<5
1,3,5-Trimethylbenzene	<5	<5	<5
Vinyl acetate	<10	<10	<10
Vinyl chloride	<10	<10	<10
Xylenes (total)	<5	<5	<5
t-Butanol	<100	<100	<100
Bromobenzene	<5	<5	<5
Bromochloromethane	<5	<5	<5
Bromodichloromethane	<5	<5	<5
2-Butanone (MEK)	<25	<25	<25
4-Methyl-2-pentanone (MIBK)	<25	<25	<25
Bromoform	<5	<5	<5
Bromomethane	<10	<10	<10
Methyl tert-butyl ether (MTBE)	<5	<5	<5
Acrolein	<100	<100	<100
n-Butylbenzene	<5	<5	<5

TABLE 2

FORMER C-6 FACILITY, LOS ANGELES, CALIFORNIA

SOIL BORING C-2-217
VOLATILE ORGANIC COMPOUNDS (VOCs) by EPA METHOD 8260B

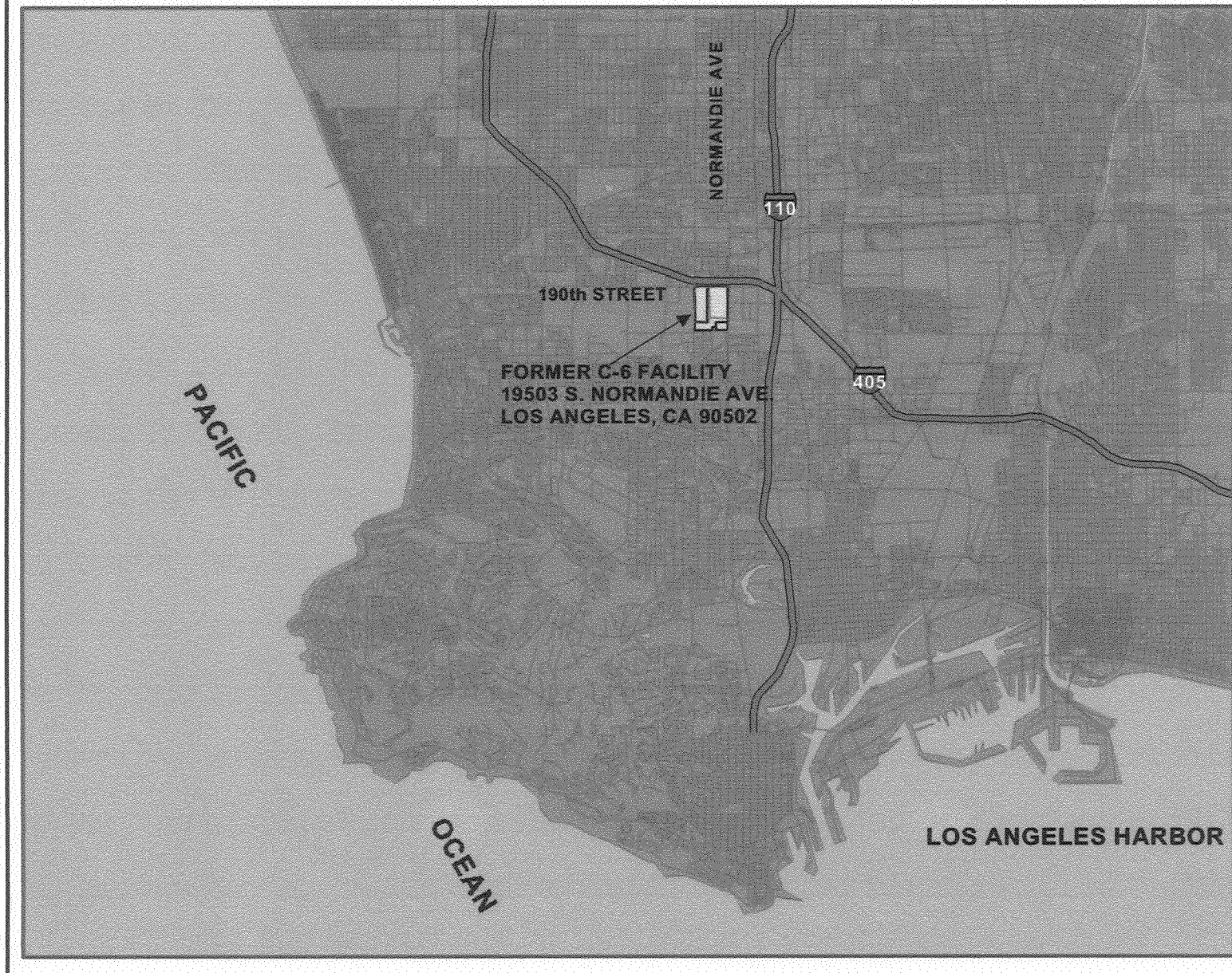
Analyte	SOIL SAMPLE ID		
	C-2-217-10 (µg/kg)	C-2-217-15 (µg/kg)	C-2-217-20 (µg/kg)
sec-Butylbenzene	<5	<5	<5
tert-Butylbenzene	<5	<5	<5
Tert-amyl methyl ether	<10	<10	<10
Tert-butyl ethyl ether	<10	<10	<10
Carbon disulfide	<5	<5	<5
Acrylonitrile	<100	<100	<100
Carbon tetrachloride	<5	<5	<5
Chlorobenzene	<5	<5	<5
Dibromochloromethane	<5	<5	<5
1,2-Dibromo-3-chloropropane	<10	<10	<10
Chloroethane	<10	<10	<10
2-Chloroethyl vinyl ether	<10	<10	<10
Chloroform	<5	<5	<5
Chloromethane	<5	<5	<5
2-Chlorotoluene	<5	<5	<5
4-Chlorotoluene	<5	<5	<5
1,2-Dibromoethane	<5	<5	<5
1,2-Dichlorobenzene	<5	<5	<5
1,3-Dichlorobenzene	<5	<5	<5
1,4-Dichlorobenzene	<5	<5	<5
Dichlorodifluoromethane	<5	<5	<5
1,1-Dichloroethane	<5	<5	<5
1,2-Dichloroethane	<5	<5	<5
1,1-Dichloroethene	<5	<5	<5
cis-1,2-Dichloroethene	<5	<5	<5
trans-1,2-Dichloroethene	<5	<5	<5
1,2-Dichloropropane	<5	<5	<5
2,2-Dichloropropane	<5	<5	<5
1,1-Dichloropropene	<5	<5	<5
cis-1,3-Dichloropropene	< 5	< 5	< 5

NOTE:
µg/kg = micrograms per kilogram

QA/QC: BB
Date: 1/30/02

Figures

FIGURES



N
W E
S

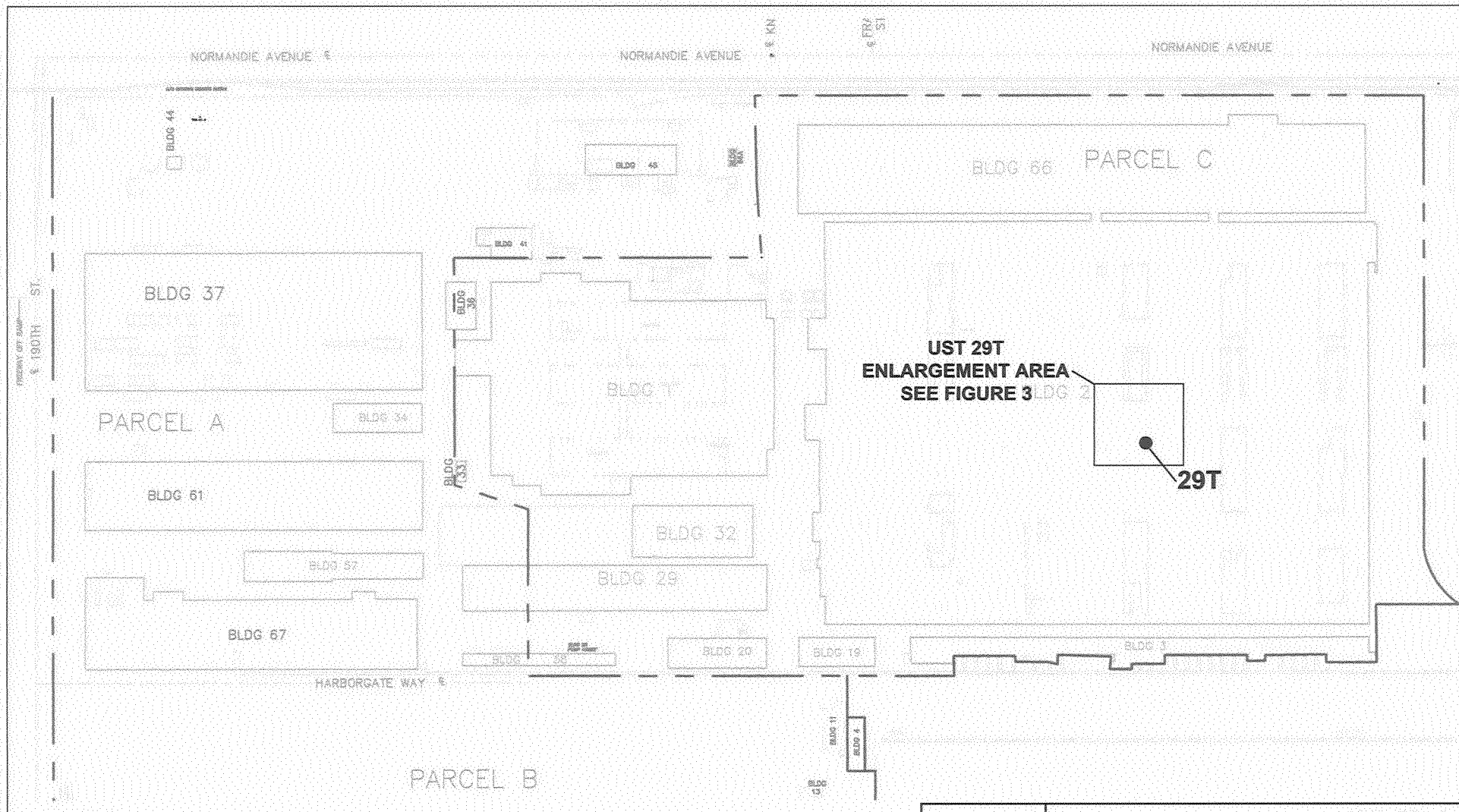
0 0.5 1 2 3
Miles

Figure 1
Site Location Map

Boeing Reality Corporation
Former C-6 Facility
Los Angeles, California

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

Scale : As Shown	QA/QC :	Project : 27285
Drawn : DFM	Reviewed : SP2	Date : 20 December 2001



LEGEND

- FORMER UNDERGROUND STORAGE TANK (UST) 29T

N

0 150 300

SCALE IN FEET

ALL DIMENSIONS AND LOCATIONS APPROXIMATE

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

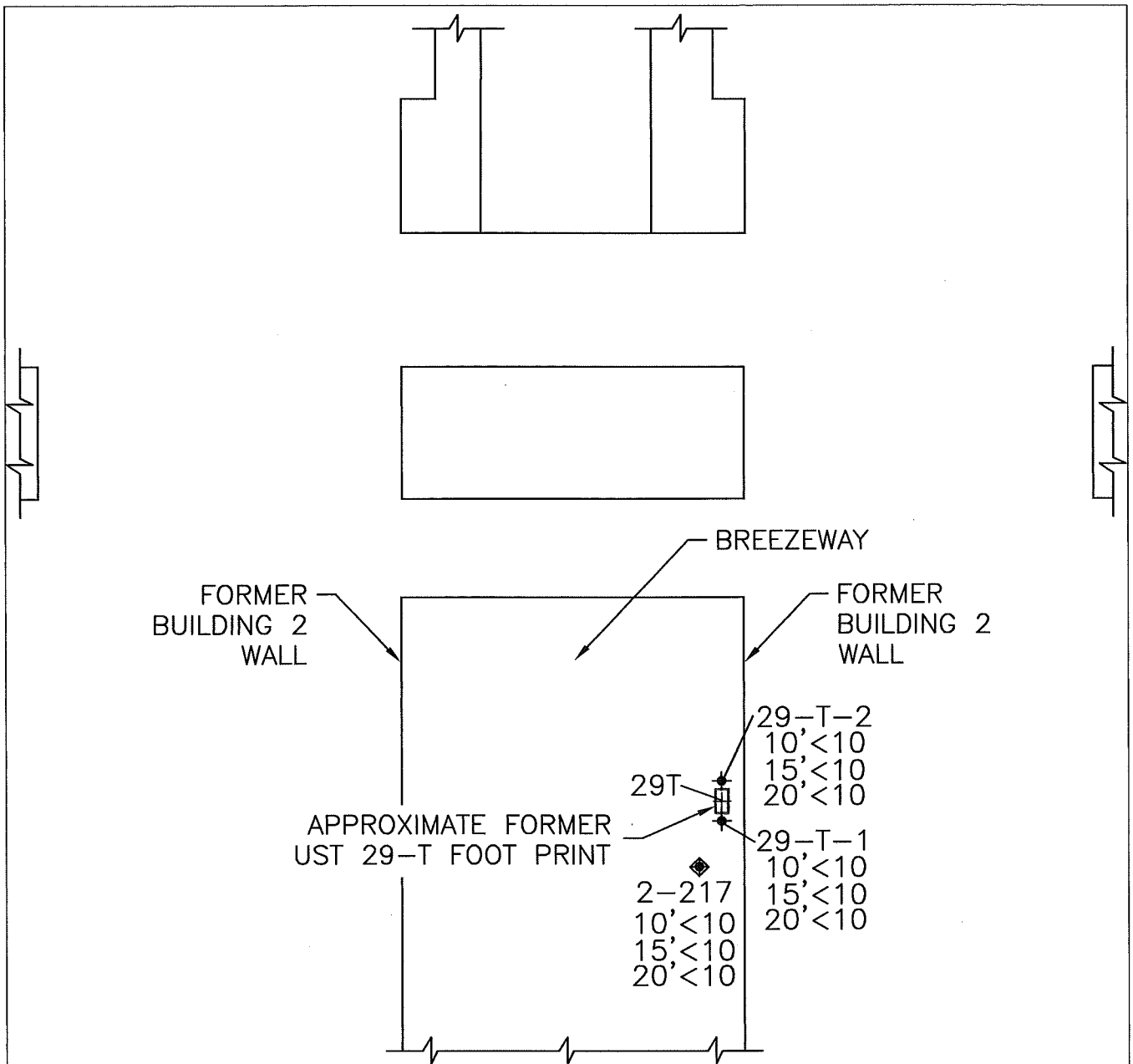
BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

FIGURE 2

FORMER UST 29T LOCATION MAP

SCALE: AS SHOWN

JANUARY 2002



LEGEND

- SURVEYED CENTER OF REPORTED TANK POSITION
- DIRECT-PUSH SOIL BORING LOCATION
- PREVIOUS DIRECT-PUSH SOIL BORING LOCATION
- BUILDING WALL
- < LESS THAN
- 20' DEPTH BELOW GROUND SURFACE (FEET)

N

0 25

SCALE IN FEET

ALL DIMENSIONS AND LOCATIONS APPROXIMATE

NOTE:
RESULTS REPORTED IN mg/Kg OF TOTAL PETROLEUM HYDROCARBONS BY EPA METHOD 8015B OR EPA METHOD 8015M.

REFERENCE:
SOURCE OF MAP: WOODWARD CLYDE CONSULTANTS PLOT PLAN DATED OCTOBER 21, 1971.

HALEY & ALDRICH

UNDERGROUND ENGINEERING & ENVIRONMENTAL SOLUTIONS

BOEING REALTY CORPORATION
FORMER C-6 FACILITY
LOS ANGELES, CALIFORNIA

FIGURE 3

FORMER UST 29T BORING LOCATIONS AND SOIL ANALYTICAL RESULTS

SCALE: AS SHOWN

JANUARY 2002

Appendix A

APPENDIX A

WOODWARD-CLYDE PLOT PLAN, 1971

ZONE 1

ZONE 2

ZONE 3

ZONE 4

ZONE 5

ZONE 6

R.P. 1

R.P. 2

R.P. 3

R.P. 4

R.P. 5

R.P. 6

R.P. 7

R.P. 8

R.P. 9

R.P. 10

R.P. 11

R.P. 12

R.P. 13

R.P. 14

R.P. 15

R.P. 16

R.P. 17

R.P. 18

R.P. 19

Bioba-Fauna

EXPLANATION

- Tanks and Sumps
- Facility Monitoring Wells
- Non-Volatile Liquid Monitoring Wells

N

NORMANDIE AVE.

190TH ST.

Woodward-Clyde Consultants

TANK LOCATION MAP

DOUGLAS AIRCRAFT CO. 41883A | PLATE 3

SIGNATURE TODAYS			
ENGR		PLOT PLAN	SCALE 1" = 100'
DWN			BLDG. CNG. TYPE
CKD		DOUGLAS AIRCRAFT COMPANY INC. FACILITIES PLANNING AIRCRAFT GROUP TORRANCE CAL.	C6-701-PL-1015 DRAWING NUMBER
APPVD			
APPVD			

BOE-C6-0181361

Appendix B

APPENDIX B

SURVEYOR REPORT

TAIT & Associates, Inc.
Engineering · Planning · Surveying

January 27, 2002

Haley & Aldrich, Inc.
9040 Friars Road, suite 220
San Diego, CA 92108
ATTN: Beth Breitenbach

RE: UST "29T" & "9T" at Boeing Realty Corp. C-6 Facility

Dear Ms. Breitenbach:

On November 7, 2001 we received a blue-line map prepared by Woodward-Clyde in 1971. This map graphically showed the location of the UST's referenced above.

Per the request of Mr. Travis Hammond, of your office, we determined the coordinates of these items by scaling from multiple building corners that were common to the TAIT digital files and the Woodward-Clyde drawing. Mr. Hammond was informed that due to the errors inherent to working with blue-lines and scales that the coordinates we probably plus or minus 10'.

On November 8, 2001 our field crew set stakes on-site at these locations. This was done to enable Haley & Aldrich to perform a search for the above referenced tanks.

The local site coordinates used by the TAIT field crew for this staking are as follows:

ITEM #	NORTHING	EASTING
9T	12848	12760
29T	11912	12257

If we can be of further service please do not hesitate to contact us.

Sincerely,

TAIT & ASSOCIATES, INC.

Michael Simon

Michael Simon, P.L.S.
Survey Manager

Appendix C

APPENDIX C

BORING LOGS

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. 29T-1

Page of

PROJECT	Former C-6 Facility	**H&A FILE NO.**	27285-001
LOCATION	19503 South Normandie Avenue, Torrance, CA, 90505	**PROJECT MGR.**	S. Zachary
CLIENT	Boeing Realty Corporation	**FIELD REP.**	T. Hammond
CONTRACTOR	Kehoe Testing & Engineering, Inc.	**DATE STARTED**	Tu 11/13/2001
DRILLER	Dee Johnson	**DATE FINISHED**	Tu 11/13/2001

Elevation ft. **Datum** **Boring Location** 4-feet south of center of 29T UST

Item	Casing	Sampler	Core Barrel
Type			
Inside Diameter (in.)			
Hammer Weight (lb.)			
Hammer Fall (in.)			

Rig Make & Model Geoprobe 5410

- ☑ Truck ☐ Tripod ☐ Cat-Head
- ☐ ATV ☑ Geoprobe ☐ Winch
- ☐ Track ☐ Air Track ☐ Roller Bit
- ☐ Skid ☐ ☐ Cutting Head

Hammer Type
- ☐ Safety
- ☐ Doughnut
- ☑ Automatic

Drilling Mud
- ☐ Bentonite
- ☐ Polymer
- ☑ None

Casing Advance Type Method Depth

Drilling Notes:

Depth (ft.)	Sampler Blows per 6 in.	Sample No. & Recovery (in.)	Sample Depth (ft.)	Well Diagram	Stratum Change (ft.)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0																	
5																	
10		12"	10'			CH	Very stiff, Dark Brown, silty sandy CLAY, No odor, Moist Brick pieces, -Fill- ATHA - 0.0 ppm			5	5	5	85	N	H	H	V
					12'-13'												
15		12"	15'			CL	Soft, Dark Brown, silty CLAY with fine sand, No odor, Moist ATHA - 0.1 ppm					5	95	N	L	M	M
20		16"	20'			CH	Medium stiff, Light Brown, silty CLAY, No odor, Moist Homogeneous, Blocky ATHA - 0.3 to 0.6 ppm					5	95	N	M	H	H
25		16"	25'			CH	Soft, Light Brown, CLAY with silt, No odor, Moist Homogeneous, Blocky ATHA - 0.8 to 2.5 ppm						100	N	H	H	V
					25' - 27'												
30		18"	30'			ML	Soft, Olive-brown to Brown, SILT with clay and very fine sand No odor, Moist, Blocky, Rust staining, ATHA - 2.0 to 3.6 ppm					15	85	N	L	M	L

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: Bottom of Casing	Bottom of Hole	Water
None					

Sample ID

- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Well Diagram

- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (Linear ft.)	
Rock Cored (Linear ft.)	None
Number of Samples	5

BORING NO. 29T-1

Field Tests Dilatancy: R - Rapid S - Slow N - None Plasticity: N - Nonplastic L - Low M - Medium H - High
Toughness: L - Low M - Medium H - High Dry Strength: N - None L - Low M - Meduim H - High V - Very High

*NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil Identifications based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

K:\template\forms\uscstb_field_log.xls

Form #3000

HALEY & ALDRICH

TEST BORING REPORT

BORING NO. 29T-2

Page of

PROJECT	Former C-6 Facility	**H&A FILE NO.**	27285-001
LOCATION	19503 South Normandie Avenue, Torrance, CA, 90505	**PROJECT MGR.**	S. Zachary
CLIENT	Boeing Realty Corporation	**FIELD REP.**	T. Hammond
CONTRACTOR	Kehoe Testing & Engineering, Inc.	**DATE STARTED**	Tu 11/13/2001
DRILLER	Dee Johnson	**DATE FINISHED**	Tu 11/13/2001

Elevation ft. **Datum** **Boring Location** 4-feet south of center of 29T UST

Item	Casing	Sampler	Core Barrel
Type			
Inside Diameter (in.)			
Hammer Weight (lb.)			
Hammer Fall (in.)			

Rig Make & Model Geoprobe 5410

- ☑ Truck ☐ Tripod ☐ Cat-Head
- ☐ ATV ☑ Geoprobe ☐ Winch
- ☐ Track ☐ Air Track ☐ Roller Bit
- ☐ Skid ☐ ☐ Cutting Head

Hammer Type
- ☐ Safety
- ☐ Doughnut
- ☑ Automatic

Drilling Mud
- ☐ Bentonite
- ☐ Polymer
- ☑ None

Casing Advance Type Method Depth

Drilling Notes:

Depth (ft.)	Sampler Blows per 6 in.	Sample No. & Recovery (in.)	Sample Depth (ft.)	Well Diagram	Stratum Change (ft.)	USCS Symbol	Visual-Manual Identification & Description (density/consistency, color, GROUP NAME & SYMBOL, maximum particle size*, structure, odor, moisture, optional descriptions, geologic interpretation)	Gravel % Coarse	Gravel % Fine	Sand % Coarse	Sand % Medium	Sand % Fine	% Fines	Field Test Dilatancy	Field Test Toughness	Field Test Plasticity	Field Test Strength
0																	
5																	
10		18"	10'			CH	Hard, Dark Brown, silty CLAY with sand, No odor, Moist, -FILL ATHA - 0.0 ppm				5	5	90	N	H	H	V
					12'-13'												
15		18"	15'			CL	Medium stiff, Dark Brown, silty CLAY with fine sand, No odor Moist, Blocky ATHA - 0.3 to 1.1 ppm					10	90	N	L	M	M
20		18"	20'			CH	Medium stiff, Light Brown, CLAY with silt, No odor, Moist Blocky, Waxy ATHA - 2.6 ppm					5	95	N	M	H	H
25		18"	25'			CH	Very stiff, Olive-brown, CLAY with trace silt, No odor Moist, Blocky, Waxy ATHA - 1.6 to 2.1 ppm						100	N	H	H	V
					25' - 27'												
30		18"	30'			ML	Soft, Olive-brown, SILT with clay and very fine sand, No odor Moist, Layering apparent, ATHA - 0.0 to 0.4 ppm					20	80	N	M	L	L

Water Level Data

Date	Time	Elapsed Time (hr.)	Depth in feet to: Bottom of Casing	Bottom of Hole	Water
None					

Sample ID
- O Open End Rod
- T Thin Wall Tube
- U Undisturbed Sample
- S Split Spoon Sample
- G Geoprobe

Well Diagram
- Riser Pipe
- Screen
- Filter Sand
- Cuttings
- Grout
- Concrete
- Bentonite Seal

Summary

Overburden (Linear ft.)
Rock Cored (Linear ft.) None
Number of Samples 5

BORING NO. 29T-2

Field Tests
Dilatancy: R - Rapid S - Slow N - None
Toughness: L - Low M - Medium H - High
Plasticity: N - Nonplastic L - Low M - Medium H - High
Dry Strength: N - None L - Low M - Meduim H - High V - Very High

*NOTE: Maximum Particle Size is determined by direct observation within the limitations of sampler size.

NOTE: Soil identifications based on visual-manual methods of the USCS system as practiced by Haley & Aldrich, Inc.

K:\template\forms\uscstb_field_log.xls

Form #3000

Appendix D

APPENDIX D

LABORATORY REPORT

SEVERN TRENT SERVICES

STL Los Angeles
1721 South Grand Avenue
Santa Ana, CA 92705-4808

Tel: 714 258 8610
Fax: 714 258 0921
www.stl-inc.com

November 19, 2001

STL LOT NUMBER: E1K130284
NELAP Certification Number: 01118CA
PO/CONTRACT: 05160-SEV002-S56

Scott Zachary
Haley & Aldrich Inc
9040 Friars Road
Suite 220
San Diego, CA 92108

Dear Mr. Zachary,

This report contains the analytical results for the 10 samples received under chain of custody by STL Los Angeles on November 13, 2001. These samples are associated with your BRC former C-6 Torrance Harbor Gateway project.

All applicable quality control procedures met method-specified acceptance criteria. See Project Receipt Checklist for container temperature and conditions. Temperature reading between 2 to 6 degrees Celsius is considered within acceptable criteria. Any matrix related anomaly is footnoted within the report.

STL Los Angeles certifies that the tests performed at our facility meet all NELAP requirements for parameters for which accreditation is required or available. The case narrative is an integral part of the report. This report shall not be reproduced except in full, without the written approval of the laboratory.

If you have any questions, please feel free to call me at (714) 258-8610 extension 309.

Sincerely,

Diane Suzuki
Project Manager

CC: Project File

Chain of Custody Record

SEVERN TRENT SERVICES — Severn Trent Laboratories, Inc.

STL-4124 (0700)

Client	Project Manager	Date	Chain of Custody Number
HALEY & ALDRICH	S. ZACHARY	11/13/01	054107
Address 9040 FRIARS RD, SUITE 220	**Telephone Number (Area Code)/Fax Number** 619-280-9210	**Lab Number** EIK130284	**Page** 1 of 1
City SAN DIEGO / **State** CA / **Zip Code** 92108	**Site Contact**	**Lab Contact**	
Project Name and Location (State) C6 - TORRANCE, CA	**Carrier/Waybill Number**		
Contract/Purchase Order/Quote No. 27285-001			

200000

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed.	Soil	Containers & Preservatives: Unpres.	H2SO4	HNOS	HCl	NaOH	ZnAc/NaOH	TPH	VOC's 8260	PAH 8310	SVOC's 8270
29-T-1-10'	11/13/01	10:00				X	X						/	HOLD		
29-T-1-15'													/	HOLD		
29-T-1-20'													/	HOLD		
29-T-1-25'													HOLD	HOLD		
29-T-1-30'													HOLD	HOLD		
29-T-2-10'		11:00											/	HOLD		
29-T-2-15'													/	HOLD		
29-T-2-20'													/	HOLD		
29-T-2-25'													HOLD	HOLD		
29-T-2-30													HOLD	HOLD		

Analysis (Attach list if more space is needed)

Special Instructions/ Conditions of Receipt

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☒ 7 Days ☐ 14 Days ☐ 21 Days ☐ Other _____

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	11/13/01	15:00	1. Received By	11/13/01	15:08
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments
HOLD ALL SAMPLES PENDING TPH ANALYSES, HOLD 25' & 30' SAMPLES PENDING SHALLOW RESULTS

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

BOE-C6-0181372

STL LOS ANGELES
PROJECT RECEIPT CHECKLIST

Date: 11/13/01

Quantims Lot #: E1K130284
Client Name: HALEY ALDRICH
Received by: MLT

Quote #: 42295
Project: C6 - TORRANCE . CA
Date/Time Received: 11/13/01 15:08

Delivered by: ☒Client ☐Airborne ☐Fed Ex ☐DHL ☐Ultra-Ex ☐Rey B. ☐UPS ☐DES ☐Other ______

Initial / Date

Custody Seal Status: ☐Intact ☐Broken ☒None .... MLT 11/13/01
Custody Seal #(s): ______ ☐No Seal # ....
Sample Container(s): ☐STL-LA ☒Client ☐N/A ....
Temperature(s) (COOLER/BLANK) in °C: 28°C (CORRECTED TEMP) 25°C ....
Thermometer Used: ☒IR (Infra-red) A (CF = -3°C) ☐Digital (Probe) ....
Samples: ☒Intact ☐Broken ☐Other ______ ....
Anomalies: ☒No ☐Yes (See Clouseau) ....
Labeled by ....
Labeling checked by ....

Turn Around Time: ☐RUSH-24HR ☐RUSH-48HR ☐RUSH-72HR ☐NORMAL (HOLD) ....
Short-Hold Notification: ☐Ph ☐Wet Chem ☐Metals (Filter/Pres) ☒Encore ☐N/A ....
Outside Analysis(es) (Test/Lab/Date Sent Out):

LEAVE NO BLANK SPACES ; USE N/A

Fraction	1→10										PH
VOAh /*	—										N/A
SLEEVE	2										—

h:HCl n:Sodium Hydroxide zn:Zinc Acetate/Sodium Hydroxide s:H2SO4 n:HNO3 nf:HNO3-Field filtered nfl:HNO3-Lab filtered
CGJ:Clear Glass Jar CGB:Clear Glass Bottle AGJ:Amber Glass Jar AGB:Amber Glass Bottle PB:Poly Bottle E:Encore Sampler V:VOA

* Number of VOA's w/ Headspace present

LOGGED BY/DATE: [signature] 11-13-01 REVIEWED BY/DATE: [signature]

000003

BOE-C6-0181373

SEVERN
TRENT
SERVICES

Analytical Report

000004

EXECUTIVE SUMMARY - Detection Highlights

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
NO DETECTABLE PARAMETERS				

METHODS SUMMARY

E1K130284

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Extractable Petroleum Hydrocarbons	SW846 8015B	SANA AUTO-SHAKE
Volatile Petroleum Hydrocarbons	SW846 8015B	SW846 5030

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

E1K130284

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
ENV81	001	29_T_1_10	11/13/01	10:00
ENV86	002	29_T_1_15	11/13/01	10:00
ENV87	003	29_T_1_20	11/13/01	10:00
ENV9A	006	29_T_2_10	11/13/01	11:00
ENV9D	007	29_T_2_15	11/13/01	11:00
ENV9E	008	29_T_2_20	11/13/01	11:00

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

HALEY & ALDRICH INC

Client Sample ID: 29_T_1_10

GC Semivolatiles

Lot-Sample #...: E1K130284-001 Work Order #...: ENV811AA Matrix.....: SOLID
Date Sampled...: 11/13/01 10:00 Date Received..: 11/13/01 15:03 MS Run #.....: 1318197
Prep Date.....: 11/14/01 Analysis Date..: 11/15/01
Prep Batch #...: 1318441 Analysis Time..: 11:59
Dilution Factor: 1
Analyst ID.....: 356074 Instrument ID..: G02
Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C8-C9	ND	10	mg/kg	5.0
C10-C11	ND	10	mg/kg	5.0
C12-C13	ND	10	mg/kg	5.0
C14-C15	ND	10	mg/kg	5.0
C16-C17	ND	10	mg/kg	5.0
C18-C19	ND	10	mg/kg	5.0
C20-C23	ND	10	mg/kg	5.0
C24-C27	ND	10	mg/kg	5.0
C28-C31	ND	10	mg/kg	5.0
C32-C35	ND	10	mg/kg	5.0
C36-C39	ND	10	mg/kg	5.0
C40+	ND	10	mg/kg	5.0
Total Carbon Chain Range	ND	10	mg/kg	5.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	83	(60 - 130)

HALEY & ALDRICH INC

Client Sample ID: 29_T_1_10

GC Volatiles

Lot-Sample #...:	E1K130284-001	Work Order #...:	ENV811AC	Matrix.....:	SOLID
Date Sampled...:	11/13/01 10:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1319248
Prep Date.....:	11/15/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1319487	Analysis Time..:	03:33		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G16		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C6-C8	ND	1.0	mg/kg	0.10

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	68	(60 - 130)

HALEY & ALDRICH INC

Client Sample ID: 29_T_1_15

GC Semivolatiles

Lot-Sample #...: E1K130284-002 Work Order #...: ENV861AA Matrix.....: SOLID
Date Sampled...: 11/13/01 10:00 Date Received..: 11/13/01 15:03 MS Run #.....: 1318197
Prep Date.....: 11/14/01 Analysis Date..: 11/15/01
Prep Batch #...: 1318441 Analysis Time..: 12:38
Dilution Factor: 1
Analyst ID.....: 356074 Instrument ID..: G02
Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C8-C9	ND	10	mg/kg	5.0
C10-C11	ND	10	mg/kg	5.0
C12-C13	ND	10	mg/kg	5.0
C14-C15	ND	10	mg/kg	5.0
C16-C17	ND	10	mg/kg	5.0
C18-C19	ND	10	mg/kg	5.0
C20-C23	ND	10	mg/kg	5.0
C24-C27	ND	10	mg/kg	5.0
C28-C31	ND	10	mg/kg	5.0
C32-C35	ND	10	mg/kg	5.0
C36-C39	ND	10	mg/kg	5.0
C40+	ND	10	mg/kg	5.0
Total Carbon Chain Range	ND	10	mg/kg	5.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	80	(60 - 130)

000010

HALEY & ALDRICH INC

Client Sample ID: 29_T_1_15

GC Volatiles

Lot-Sample #...:	E1K130284-002	Work Order #...:	ENV861AC	Matrix.....:	SOLID
Date Sampled...:	11/13/01 10:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1319248
Prep Date.....:	11/15/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1319487	Analysis Time..:	04:02		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G16		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C6-C8	ND	1.0	mg/kg	0.10

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	72	(60 - 130)

000011

HALEY & ALDRICH INC

Client Sample ID: 29_T_1_20

GC Semivolatiles

Lot-Sample #...: E1K130284-003	Work Order #...: ENV871AA	Matrix.....: SOLID
Date Sampled...: 11/13/01 10:00	Date Received..: 11/13/01 15:03	MS Run #.....: 1318197
Prep Date.....: 11/14/01	Analysis Date..: 11/15/01	
Prep Batch #...: 1318441	Analysis Time..: 14:35	
Dilution Factor: 1		
Analyst ID.....: 356074	Instrument ID..: G02	
	Method.....: SW846 8015B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C8-C9	ND	10	mg/kg	5.0
C10-C11	ND	10	mg/kg	5.0
C12-C13	ND	10	mg/kg	5.0
C14-C15	ND	10	mg/kg	5.0
C16-C17	ND	10	mg/kg	5.0
C18-C19	ND	10	mg/kg	5.0
C20-C23	ND	10	mg/kg	5.0
C24-C27	ND	10	mg/kg	5.0
C28-C31	ND	10	mg/kg	5.0
C32-C35	ND	10	mg/kg	5.0
C36-C39	ND	10	mg/kg	5.0
C40+	ND	10	mg/kg	5.0
Total Carbon Chain Range	ND	10	mg/kg	5.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	79	(60 - 130)

000012

HALEY & ALDRICH INC

Client Sample ID: 29_T_1_20

GC Volatiles

Lot-Sample #...:	E1K130284-003	Work Order #...:	ENV871AC	Matrix.....:	SOLID
Date Sampled...:	11/13/01 10:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1319248
Prep Date.....:	11/15/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1319487	Analysis Time..:	04:31		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G16		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C6-C8	ND	1.0	mg/kg	0.10

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	64	(60 - 130)

HALEY & ALDRICH INC

Client Sample ID: 29_T_2_10

GC Semivolatiles

Lot-Sample #...: E1K130284-006	Work Order #...: ENV9A1AA	Matrix.....: SOLID	
Date Sampled...: 11/13/01 11:00	Date Received..: 11/13/01 15:03	MS Run #.....: 1318197	
Prep Date.....: 11/14/01	Analysis Date..: 11/15/01		
Prep Batch #...: 1318441	Analysis Time..: 15:14		
Dilution Factor: 1			
Analyst ID.....: 356074	Instrument ID..: G02		
	Method.....: SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C8-C9	ND	10	mg/kg	5.0
C10-C11	ND	10	mg/kg	5.0
C12-C13	ND	10	mg/kg	5.0
C14-C15	ND	10	mg/kg	5.0
C16-C17	ND	10	mg/kg	5.0
C18-C19	ND	10	mg/kg	5.0
C20-C23	ND	10	mg/kg	5.0
C24-C27	ND	10	mg/kg	5.0
C28-C31	ND	10	mg/kg	5.0
C32-C35	ND	10	mg/kg	5.0
C36-C39	ND	10	mg/kg	5.0
C40+	ND	10	mg/kg	5.0
Total Carbon Chain Range	ND	10	mg/kg	5.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	80	(60 - 130)

HALEY & ALDRICH INC

Client Sample ID: 29_T_2_10

GC Volatiles

Lot-Sample #...:	E1K130284-006	Work Order #...:	ENV9A1AC	Matrix.....:	SOLID
Date Sampled...:	11/13/01 11:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1319248
Prep Date.....:	11/15/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1319487	Analysis Time..:	05:00		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G16		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C6-C8	ND	1.0	mg/kg	0.10

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	67	(60 - 130)

HALEY & ALDRICH INC

Client Sample ID: 29_T_2_15

GC Semivolatiles

Lot-Sample #...: E1K130284-007 Work Order #...: ENV9D1AA Matrix.....: SOLID
Date Sampled...: 11/13/01 11:00 Date Received..: 11/13/01 15:03 MS Run #.....: 1318197
Prep Date.....: 11/14/01 Analysis Date..: 11/15/01
Prep Batch #...: 1318441 Analysis Time..: 15:53
Dilution Factor: 1
Analyst ID.....: 356074 Instrument ID..: G02
Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C8-C9	ND	10	mg/kg	5.0
C10-C11	ND	10	mg/kg	5.0
C12-C13	ND	10	mg/kg	5.0
C14-C15	ND	10	mg/kg	5.0
C16-C17	ND	10	mg/kg	5.0
C18-C19	ND	10	mg/kg	5.0
C20-C23	ND	10	mg/kg	5.0
C24-C27	ND	10	mg/kg	5.0
C28-C31	ND	10	mg/kg	5.0
C32-C35	ND	10	mg/kg	5.0
C36-C39	ND	10	mg/kg	5.0
C40+	ND	10	mg/kg	5.0
Total Carbon Chain Range	ND	10	mg/kg	5.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	83	(60 - 130)

HALEY & ALDRICH INC

Client Sample ID: 29_T_2_15

GC Volatiles

Lot-Sample #...:	E1K130284-007	Work Order #...:	ENV9D1AC	Matrix.....:	SOLID
Date Sampled...:	11/13/01 11:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1319248
Prep Date.....:	11/15/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1319487	Analysis Time..:	05:29		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G16		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C6-C8	ND	1.0	mg/kg	0.10

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	67	(60 - 130)

000017

HALEY & ALDRICH INC

Client Sample ID: 29_T_2_20

GC Semivolatiles

Lot-Sample #...:	E1K130284-008	Work Order #...:	ENV9E1AA	Matrix.....:	SOLID
Date Sampled...:	11/13/01 11:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1318197
Prep Date.....:	11/14/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1318441	Analysis Time..:	16:32		
Dilution Factor:	1				
Analyst ID.....:	356074	Instrument ID..:	G02		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C8-C9	ND	10	mg/kg	5.0
C10-C11	ND	10	mg/kg	5.0
C12-C13	ND	10	mg/kg	5.0
C14-C15	ND	10	mg/kg	5.0
C16-C17	ND	10	mg/kg	5.0
C18-C19	ND	10	mg/kg	5.0
C20-C23	ND	10	mg/kg	5.0
C24-C27	ND	10	mg/kg	5.0
C28-C31	ND	10	mg/kg	5.0
C32-C35	ND	10	mg/kg	5.0
C36-C39	ND	10	mg/kg	5.0
C40+	ND	10	mg/kg	5.0
Total Carbon Chain Range	ND	10	mg/kg	5.0

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	86	(60 - 130)

HALEY & ALDRICH INC

Client Sample ID: 29_T_2_20

GC Volatiles

Lot-Sample #...:	E1K130284-008	Work Order #...:	ENV9E1AC	Matrix.....:	SOLID
Date Sampled...:	11/13/01 11:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1319248
Prep Date.....:	11/15/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1319487	Analysis Time..:	05:57		
Dilution Factor:	1				
Analyst ID.....:	001464	Instrument ID..:	G16		
		Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS	MDL
C6-C8	ND	1.0	mg/kg	0.10

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	63	(60 - 130)

SEVERN
TRENT
SERVICES

QA/QC

000020

QC DATA ASSOCIATION SUMMARY

E1K130284

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SOLID	SW846 8015B		1318441	1318197
	SOLID	SW846 8015B		1319487	1319248
002	SOLID	SW846 8015B		1318441	1318197
	SOLID	SW846 8015B		1319487	1319248
003	SOLID	SW846 8015B		1318441	1318197
	SOLID	SW846 8015B		1319487	1319248
006	SOLID	SW846 8015B		1318441	1318197
	SOLID	SW846 8015B		1319487	1319248
007	SOLID	SW846 8015B		1318441	1318197
	SOLID	SW846 8015B		1319487	1319248
008	SOLID	SW846 8015B		1318441	1318197
	SOLID	SW846 8015B		1319487	1319248

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: E1K130284
MB Lot-Sample #: E1K140000-441

Work Order #...: ENX5R1AA
Prep Date.....: 11/14/01
Prep Batch #...: 1318441
Analyst ID.....: 356074

Matrix.....: SOLID
Analysis Time..: 10:41
Instrument ID..: G02

Analysis Date..: 11/15/01
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
C8-C9	ND	10	mg/kg	SW846 8015B
C10-C11	ND	10	mg/kg	SW846 8015B
C12-C13	ND	10	mg/kg	SW846 8015B
C14-C15	ND	10	mg/kg	SW846 8015B
C16-C17	ND	10	mg/kg	SW846 8015B
C18-C19	ND	10	mg/kg	SW846 8015B
C20-C23	ND	10	mg/kg	SW846 8015B
C24-C27	ND	10	mg/kg	SW846 8015B
C28-C31	ND	10	mg/kg	SW846 8015B
C32-C35	ND	10	mg/kg	SW846 8015B
C36-C39	ND	10	mg/kg	SW846 8015B
C40+	ND	10	mg/kg	SW846 8015B
Total Carbon Chain Range	ND	10	mg/kg	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	75	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: E1K130284
MB Lot-Sample #: E1K150000-487

Work Order #...: EN2981AA
Prep Date.....: 11/15/01
Prep Batch #...: 1319487
Analyst ID.....: 001464

Matrix.....: SOLID
Analysis Time..: 02:35
Instrument ID..: G16

Analysis Date..: 11/15/01
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
C6-C8	ND	1.0	mg/kg	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	60	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: E1K130284 **Work Order #...:** ENX5R1AC **Matrix.....:** SOLID
LCS Lot-Sample#: E1K140000-441
Prep Date.....: 11/14/01 **Analysis Date..:** 11/15/01
Prep Batch #...: 1318441 **Analysis Time..:** 11:20
Dilution Factor: 1 **Instrument ID..:** G02
Analyst ID.....: 356074

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
TPH (as Diesel)	**250**	**207**	**mg/kg**	**83**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	90	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC Volatiles

Client Lot #...: E1K130284 Work Order #...: EN2981AC Matrix.....: SOLID
LCS Lot-Sample#: E1K150000-487
Prep Date.....: 11/15/01 Analysis Date..: 11/15/01
Prep Batch #...: 1319487 Analysis Time..: 02:06
Dilution Factor: 1 Instrument ID..: G16
Analyst ID.....: 001464

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
TPH (as Gasoline)	**5.00**	**4.64**	**mg/kg**	**93**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	90	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: E1K130284 Work Order #...: ENX5R1AC Matrix.....: SOLID
LCS Lot-Sample#: E1K140000-441
Prep Date.....: 11/14/01 Analysis Date..: 11/15/01
Prep Batch #...: 1318441 Analysis Time..: 11:20
Dilution Factor: 1 Instrument ID..: G02
Analyst ID.....: 356074

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
TPH (as Diesel)	**83**	**(60 - 130)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	90	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: E1K130284 Work Order #...: EN2981AC Matrix.....: SOLID
LCS Lot-Sample#: E1K150000-487
Prep Date.....: 11/15/01 Analysis Date..: 11/15/01
Prep Batch #...: 1319487 Analysis Time..: 02:06
Dilution Factor: 1 Instrument ID..: G16
Analyst ID.....: 001464

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
TPH (as Gasoline)	**93**	**(80 - 140)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	90	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...:	E1K130284	Work Order #...:	ENV861AD-MS	Matrix.....:	SOLID
MS Lot-Sample #:	E1K130284-002		ENV861AE-MSD		
Date Sampled...:	11/13/01 10:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1318197
Prep Date.....:	11/14/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1318441	Analysis Time..:	13:17		
Dilution Factor:	1	Analyst ID.....:	356074	Instrument ID..:	G02

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Diesel)	ND	250	199	mg/kg	80		SW846 8015B
	ND	250	197	mg/kg	79	1.1	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	86	(60 - 130)
	85	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE DATA REPORT

GC Volatiles

Client Lot #...:	E1K130284	**Work Order #...:**	ENV9D1AD-MS	**Matrix.....:**	SOLID
MS Lot-Sample #:	E1K130284-007		ENV9D1AE-MSD		
Date Sampled...:	11/13/01 11:00	**Date Received..:**	11/13/01 15:03	**MS Run #.....:**	1319248
Prep Date.....:	11/15/01	**Analysis Date..:**	11/15/01		
Prep Batch #...:	1319487	**Analysis Time..:**	07:24		
Dilution Factor:	1	**Analyst ID.....:**	001464	**Instrument ID..:**	G16

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
TPH (as Gasoline)	**ND**	**5.00**	**4.75**	**mg/kg**	**95**		**SW846 8015B**
	ND	**5.00**	**4.71**	**mg/kg**	**94**	**0.73**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	98	(60 - 130)
	96	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...:	E1K130284	Work Order #...:	ENV861AD-MS	Matrix.....:	SOLID
MS Lot-Sample #:	E1K130284-002		ENV861AE-MSD		
Date Sampled...:	11/13/01 10:00	Date Received..:	11/13/01 15:03	MS Run #.....:	1318197
Prep Date.....:	11/14/01	Analysis Date..:	11/15/01		
Prep Batch #...:	1318441	Analysis Time..:	13:17		
Dilution Factor:	1	Analyst ID.....:	356074	Instrument ID..:	G02

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Diesel)	**80**	**(60 - 130)**			**SW846 8015B**
	79	**(60 - 130)**	**1.1**	**(0-35)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Benzo(a)pyrene	86	(60 - 130)
	85	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...:	E1K130284	**Work Order #...:**	ENV9D1AD-MS	**Matrix.....:**	SOLID
MS Lot-Sample #:	E1K130284-007		ENV9D1AE-MSD		
Date Sampled...:	11/13/01 11:00	**Date Received..:**	11/13/01 15:03	**MS Run #.....:**	1319248
Prep Date.....:	11/15/01	**Analysis Date..:**	11/15/01		
Prep Batch #...:	1319487	**Analysis Time..:**	07:24		
Dilution Factor:	1	**Analyst ID.....:**	001464	**Instrument ID..:**	G16

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
TPH (as Gasoline)	**95**	**(80 - 140)**			**SW846 8015B**
	94	**(80 - 140)**	**0.73**	**(0-40)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
a,a,a-Trifluorotoluene (TFT)	98	(60 - 130)
	96	(60 - 130)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters